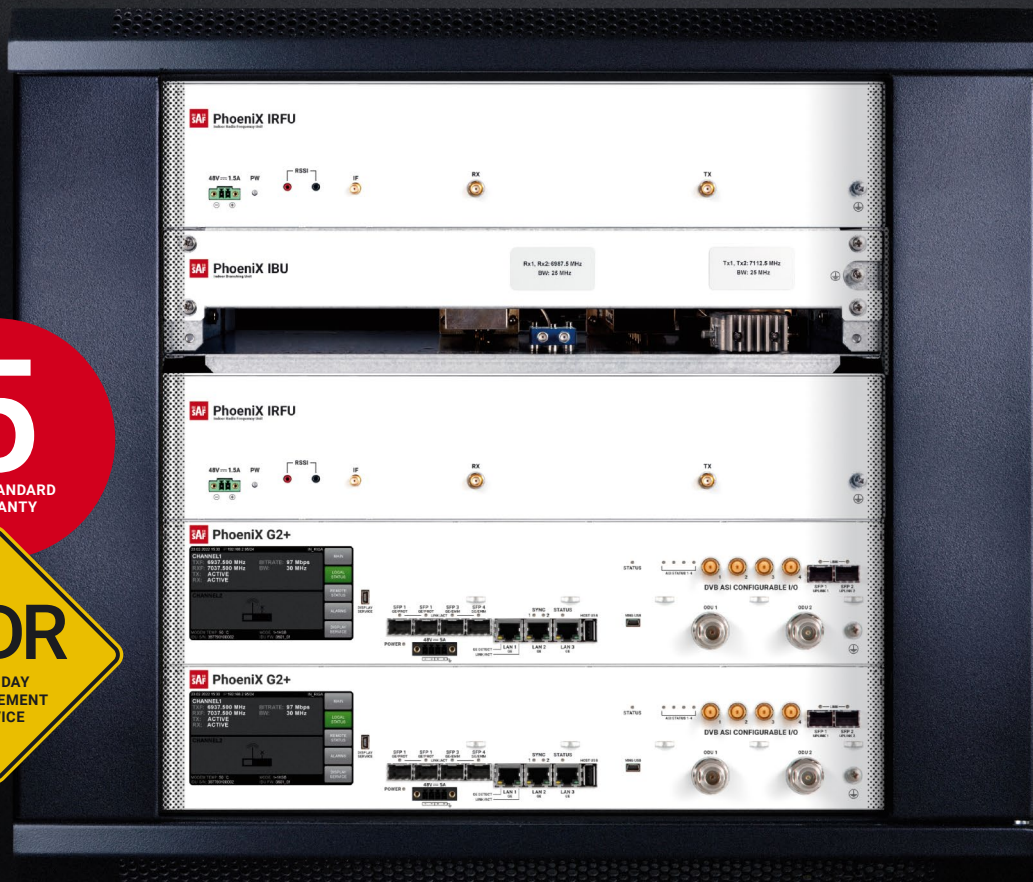


Phoenix G2 Series



ASI + IP microwave for ATSC 1.0 and ATSC 3.0



saftehnika.com



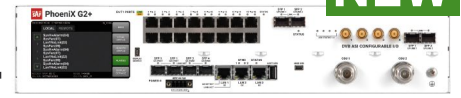
- ✓ Ideal for STL/TSL, Intercity Relay and ENG backhaul for simultaneous ASI and IP connectivity with future migration to all IP
- ✓ Flexible configurations with available hitless Adaptive Code Modulation (ACM): Full duplex, Simplex, Hot-Standby fully protected, and Space Diversity
- ✓ Comprehensive web browser control and monitoring with error logging and alarm notifications
- ✓ Single frequency dual polarity support with XPIC capability to double data rates in a 2+0 or 2+2 configuration
- ✓ New Phoenix G2+ have a touch-sensitive LCD control panel for quick and easy critical parameter monitoring and single chassis design with ultra-reliable fanless cooling

Supporting channel bandwidths of up to 80 MHz, the Phoenix G2 Series enables a transition from TDM only or ASI only networks to hybrid native ASI/T1/E1/ IP networks, providing up to 16 ASI ports for video or up to 64E1/T1 lines for telephony, and Gigabit Ethernet ports for IP connectivity with a total throughput of up to 1 Gbps in 2+0 configuration.

G2



G2+



Capacity		up to 1 Gbps in 2+0 configuration	
Frequency bands		2 GHz, 2.3 GHz FCC, L4 GHz, U4 GHz, L6 GHz, U6 GHz, 7 GHz, 8 GHz, 11 GHz, 13 GHz, 15 GHz, 18 GHz, 23 GHz, 38 GHz	
Max modulation		1024QAM	
Configurations		1+0, 1+1 HSB/SD/FD, 1+0 Dual, 1+0 Star (Repeater), 2+0 (Layer 1 aggregation), 2+0 XPIC, 2+2 aggregation/protection (with two IDUs)	
Channel bandwidth	ETSI	from 3.5 MHz, up to 56 MHz	
	FCC	from 5 MHz, up to 80 MHz*	
Maximum Tx power		+37 dBm	
Modifications		IDU with external extension modules (ASI and E1/T1)	IDU w/o extensions; IDU with embedded 4x ASI; IDU w 8x ASI; IDU with 16E1/T1; IDU with 4x ASI and 16E1/T1. More extension modules can be added externally
Ethernet switch		Managed Gigabit Ethernet Layer 2	
Management		In-band (via port grouping), Out-of-band; Web based, HTTP/HTTPS; via WEB GUI (HTTP*/HTTPS), CLI (Telnet/SSH), NMS (SNMP v1/v2c/v3), Serial interface (USB IP port); SNMP traps, MIB, SNMP v1/v2c/3; Perf. monitoring	
Synchronization		PTP 1588v2	
Encryption		AES256	
QoS		IPv4 64 level DiffServ (DSCP) or 8 level 802.1p mapped in 4 prioritization queues with VLAN support, IPv6 Traffic Class	
Type		Split Mount (IDU + ODU) or Full indoor (IDU + IRFU)	
Cooling		3-mode Fans built-in: On, Off, Auto (controlled by internal temperature)	Fanless
Form factor		½ width 1U (44 x 220 x 240 mm) / (1.73 x 8.66 x 9.45 in); 2.2 kg / 4.9 lb	19" 2U (90 x 430 x 265 mm) / (3.54 x 16.93 x 10.43 in); <3.5 kg / <6.61 lbs
Max. power consumption		IDU only: <30W	IDU only w/o ASI or E1/T1: <27W, 4xASI: <10W, 16xE1/T1: <10W. IDU + 2xODU: < IDU + 150W
Temperature range		-5 °C to +45 °C / 23 °F to 113 °F / 0 % to 95 %	
Display		—	LCD touchscreen
Ports			
Ethernet traffic	RJ-45	3x 10/1000 Base-T for traffic and/or management access	
	SFP	4x 1000BaseSX/LX for traffic, 2x also work as Extension/Protection ports	
ASI (optional)	BNC	Available on external extension module	up to 8x unbalanced, 75 ohm native ASI channels for ASI input
E1/T1 (optional)	RJ-45	Available on external extension module	up to 16x G.703-E1 balanced 120ohm for E1 mode; G.703-E1 unbalanced 75 ohm for E1 mode; T1.102-T1/100 ohm for T1 mode
IDU <-> ASI/E1/T1	SFP	Available on external extension module	1x 1000Base-SX (proprietary GigE protocol) for embedded ASI and/or E1/T1 module connection
Additional module connection	SFP	Available on external extension module	1x 1000Base-SX (proprietary GigE protocol) for additional ASI and/or E1/T1 module connection
Outband management access	RJ-45	1x 10/100/1000 Base-T for management traffic	
Serial	USB Mini-B	1x – for configuration (alternative IP)	
Flash memory	USB A	1x for log files export	
Display service	USB Mini-B	—	1x for display maintenance
ODU	N-Type Female	2x for connection to radio units	
DC power	Single block 4 pole	1x for input power source connection	

* 2 GHz, 4 GHz and 38 GHz band radios work up to 60 MHz BW. Please contact SAF.

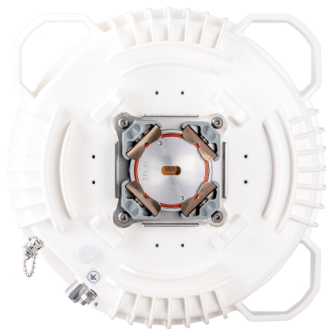
Tx power for IRFU w/o filters

Modulation	2 GHz (VHP)	L4, U4 GHz (HP)	L6, U6 GHz (HP/VHP)	7 GHz (HP/VHP)	8 GHz (HP/VHP)	11 GHz (HP/VHP)	13 GHz (HP/VHP)	*15 GHz (HP)
Min Tx power	+17	+14	+9/+14	+9/+13	+9/+12	+7/+10	+7/+9	+7
4 QAM	+37	+33	+28/+34	+28/+33	+28/+32	+26/+30	+26/+29	+26
16 QAM	+36	+32	+27/+33	+27/+32	+27/+31	+25/+29	+25/+28	+25
32 QAM	+35	+31	+26/+32	+26/+31	+26/+30	+24/+28	+24/+27	+24
64 QAM	+34	+30	+25/+31	+25/+30	+25/+29	+23/+27	+23/+26	+23
128 QAM	+34	+30	+25/+31	+25/+30	+25/+29	+23/+27	+23/+26	+23
256 QAM	+33	+29	+24/+30	+24/+29	+24/+28	+22/+26	+22/+25	+22
512 QAM	+32	+28	+23/+29	+23/+28	+23/+27	+21/+25	+21/+24	+21
1024 QAM	+29	+25	+20/+26	+20/+25	+20/+24	+18/+22	+18/+21	+18

For IRFU with diplexer the Tx power is 1dBm lower.

*Preliminary data

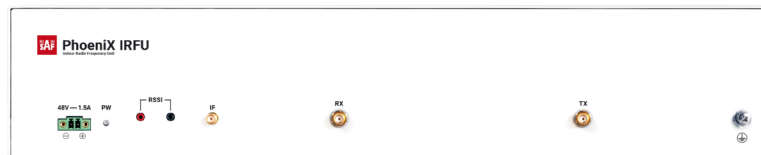
RF Module Options



ODU (outdoor unit)



IRFU (indoor unit with built-in duplexer)

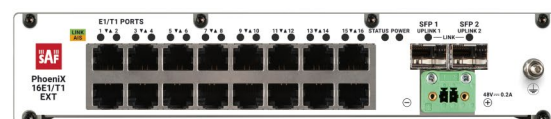


IRFU (indoor unit for external filters)

Optional modules



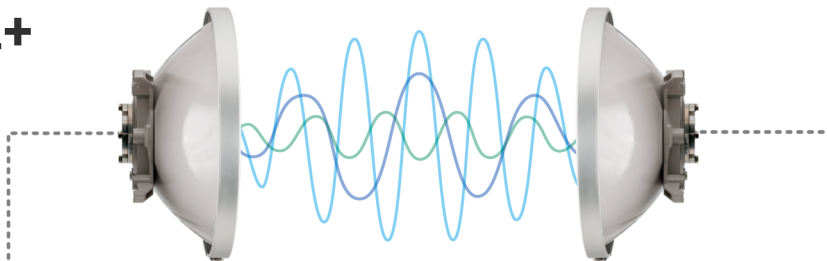
External ASI module, 4x BNC, 2x SFP ports



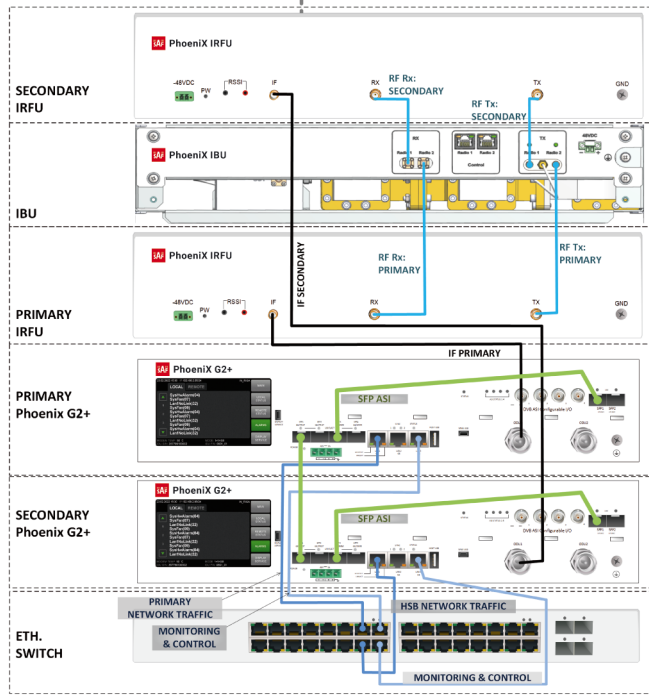
16E1/T1 external module, 16x RJ-45, 2x SFP ports

Phoenix G2+

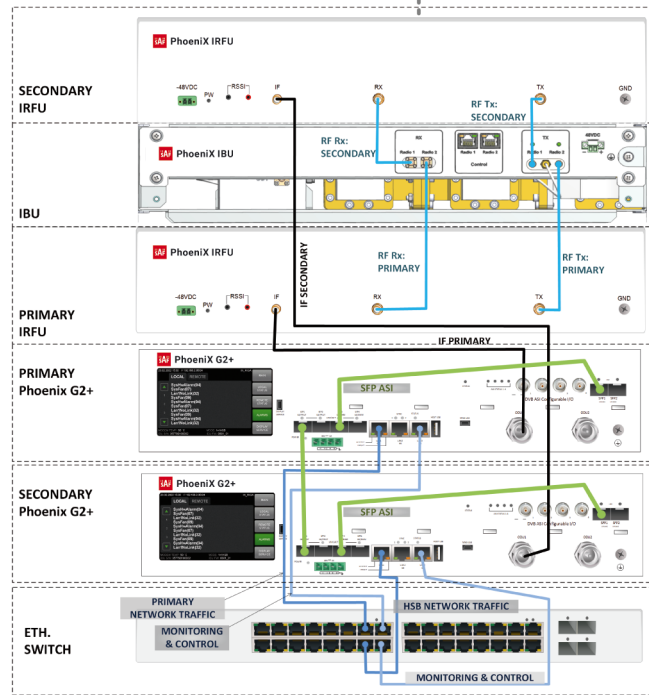
1+1 HSB
Full Redundancy



RF HIGH



RF LOW



Max Tx Power, RSL and Capacity of Phoenix G2 IRFU w. ext filters at 25 MHz

Modulation	6 GHz		13 GHz		Capacity (Mbps)	2+0 XPIC Capacity (Mbps)	
	VHP Tx (dBm)	RSL (dBm)	VHP Tx (dBm)	RSL (dBm)			
25 MHz	4QAM	+34	-85	+29	-84.5	37	74
	16QAM	+33	-79	+28	-78	74	148
	32QAM	+32	-75.5	+27	-75	93	186
	64QAM	+31	-73	+26	-72	111	222
	128QAM	+31	-70	+26	-69	130	260
	256QAM	+30	-67	+25	-66	148	296
	512QAM	+29	-64	+24	-62.5	167	334
	1024QAM	+26	-61	+21	-59.5	186	372



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